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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,346	09/09/2003	Royden M. Honda	MN1-006US	2107
29150	7590	10/27/2004	EXAMINER	
LEE & HAYES, PLLC 421 W. RIVERSIDE AVE, STE 500 SPOKANE, WA 99201			DINH, TRINH VO	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,346

Applicant(s)

HONDA ET AL.

Examiner

Trinh Vo Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed 09/09/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1--23, 36-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 36-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/09/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. The Applicant election with traverse with cancellation of nonelected claims 24-35 is acknowledged. The Applicant traverses on the ground that the restriction requirement is improper and the species can be searched without burden to the office. The Examiner disagrees and asserts that examination of all species will present an undue burden. Therefore, the restriction for examination is proper and Final.

Claim Objections

2. Claims 2-18, 22-23, 36-47 are objected to because of the following informalities:

In claims 2-18, 22-23 and 36-47, line 1, "A" should be changed to --The--.

In claim 21, lines 5 and 7, "the enclosed waveguide" has no antecedent basis. "the enclosed waveguide" should be changed to --the waveguide--.

In claim 22, line 2, "the enclosed waveguide" should be changed to --the waveguide--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 7, 9, 11-20, 22-23 draw to the apparatus and method claims 36-37 and 41-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (US 5,416,492).

With respect to claims 1, 20 and 22, Takahashi discloses an antenna element (Figs. 1-2 col. 4, lines 30-35) a front plate (2) that includes slots (17) configured for wireless communication signal transfer, a dielectric (12) configured to regulate a cutoff wavelength of the antenna element (col. 5, lines 17-40), a channel guide (1) coupled to the front plate and configured to confine the dielectric in a position that aligns the dielectric with the slots in the front plate, and a back plate (18) coupled to the channel guide and configured to enclose the dielectric within the channel guide to form an enclosed dielectric channel.

With respect to claim 7, Takahashi discloses the channel guide (1) includes at least a first sidewall and a second sidewall (3 in Figs. 1-2), and wherein the first sidewall and the second sidewall are each configured to prevent communication signal interference.

With respect to claims 9, 11-12, 15-16 Takahashi discloses, in Fig. 46, the front plate including a first row of one or more of the slots (31) and a second row of one or more of the slots (31), and the slots in the first row are offset from the slot in the second row in a direction parallel to the first row and a distance that is substantially a length of the slot. Takahashi furthermore discloses an offset slot is substantially rectangular having an offset section formed about a traverse center of the offset slot.

With respect to claims 13-14, Takahashi discloses, the slots in the front plate being substantially rectangular (21 in Fig. 1), or notched slots (Fig. 46),

With respect to claim 19 and 23, Takahashi discloses a waveguide being in used in an antenna assembly (abstract, col. 4, lines 30-35).

With respect to claims 17-18, Takahashi discloses, in Figs. 61, 63, 65 or col. 15, lines 49+, a connection system configured to communicatively coupled the antenna element to tan

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antenna system component (64, 65, 74, 77), an RF connection system (col. 15, lines 65-68) configured to communicatively coupled the antenna element to an antenna system component.

With respect to claims 36-37 and 41-47, the apparatus discussed above would perform the claimed method.

5. Claims 20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bond (US 4,864,314).

With respect to claims 20 and 23, Bond discloses a waveguide (col. 4, lines 28-34) comprising a solid dielectric (11 + 12 in Figs. 1, 4) and being used in an antenna assembly (col. 4, lines 28-57).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Kishino et al (US 6,094,106).

Takahashi discloses every feature of the claimed invention except the dielectric being formed from a polystyrene material. Kishino discloses a dielectric being polystyrene (col. 1, lines 29-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use polystyrene for forming the dielectric because of its easy process ability.

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8. Claims 3-6 and 21 draw to the apparatus and the method claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Piloto et al (US 5,382,931).

With respect to claims 3-5 and 21, Takahashi discloses every feature of the claimed invention except the dielectric including a center conductive section and one or more cross section transverse to the center conductor section. Piloto discloses, in Fig. 1, a dielectric (12) having a center conductor section and one or more cross sections perpendicular to the center conductive section and transverse to the center conductor section (col. 3, lines 28-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ Piloto's structure to Takahashi's dielectric. Doing so would improve the cutoff wavelength of antenna element.

With respect to claim 6, Takahashi further discloses, in Figs. 46-47, the center conductive section (12) extending lengthwise within the enclosed dielectric channel between a first row of the slots and a second row of the slots (31).

With respect to claims 38-40, the apparatus discussed above would perform the claimed method.

9. Claims 8, 10 draw to the apparatus and the method claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Hoover et al (US 5,757,329).

Takahashi discloses substantially the claimed invention as noted above in claim 1. Takahashi also discloses, including in the first plate, the slots spaced apart a distance of antenna's wavelength divided by two. Hoover discloses a plate (44) including slots (56) spaced apart a distance of $\frac{1}{2}$ the wavelength (col. 9, lines 9-25). Since one of ordinary skill in the art would recognize the benefit of improving the performance and the electrical characteristic of

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the antenna element, it would have been obvious to configure the slots with $\frac{1}{2}$ wavelength space apart as taught by Hoover.

Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821. The examiner can normally be reached on Monday to Friday from 9:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Trinh Vo Dinh
October 22, 2004